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09/732,467	12/07/2000	James L. Marsh	10005272-1	3188

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EXAMINER
ROCHE, TRENTON J

ART UNIT	PAPER NUMBER
2124	

DATE MAILED: 07/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Peri d f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _07 December 2000_ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-26_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-26_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _07 December 2000_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

1.   Claims 1-26 have been examined.

Drawings

2.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they

do not include the following reference sign(s) mentioned in the description: 210f as stated on

page 11, line 27. A proposed drawing correction or corrected drawings are required in reply to

the Office action to avoid abandonment of the application. The objection to the drawings will

not be held in abeyance.

Specification

3.   The disclosure is objected to because of the following informalities: On page 12, lines 2-

3, 100f is not mentioned. It is assumed that 100f works in the same manner as the other computer

systems.

      Appropriate correction is required.

4.   The disclosure is objected to because of the following informalities: On page 13, line 19,

there is no Figure 4B. It is assumed to read Figure 4.

      Appropriate correction is required.

Claim Rejections - 35 USC § 112

5.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

6.   Claims 1-13 and 18-26 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

7.   Claims 1, 10 and 18 recite the limitation "modified boot memory". There is insufficient

antecedent basis for this limitation in the claims. There is no reference to a prior un-modified

boot memory in any of the claims or the specification. For purposes of examination this will be

assumed to read "boot memory".

8.   Claims 2-8, 11-13 and 19-26 are rejected for the reason set forth in connection with

claims 1, 10 and 18 above.

9.   Claims 4, 18 and 21 recites the limitation "the new firmware". There is insufficient

antecedent basis for this limitation in the claim. For purposes of examination this will be

assumed to read "a new firmware".

10.   Claims 19-26 are rejected for the reason set forth in connection with claim 18 above.

11.   Claim 9 recites the limitation "modified boot memory map" in line 12. There is

insufficient antecedent basis for this limitation in the claim. Neither the specification nor the

claim clearly define a "modified boot memory map" and what distinctly constitutes a "map," nor

does it state a prior un-modified boot memory map. For purposes of examination this will be

assumed to read "boot memory".

12.   Claims 10-13 are rejected for the reason set forth in connection with claim 9 above.

Claim Rejections - 35 USC § 102

13.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14.   Claims 1, 9, 10 and 13 rejected under 35 U.S.C. 102(b) as being anticipated by U.S.

Patent 5,895,911 to Angelo et al.

Regarding claim 1:

Angelo et al teach:

-    a computer system coupled to a network ("a computer system having a receiving

     computer and a source computer" in col. 1 lines 56-57)

-    a programmable non-volatile memory ("stores the flash information…in NVRAM" in

     col. 3 lines 21-22)

-    at least one microprocessor operatively coupled to execute at least one instruction from

     the programmable non-volatile memory in response to a boot request, the microprocessor

     configured to controllably write to the programmable non-volatile memory ("the

     receiving computer is placed in a predetermined operating state, such as by going through

     a cold boot power cycle" in col. 3 lines 31-33. Because the computer is placed into an

     operating state, the microprocessor must have executed an instruction from memory. Due

     to the nature of an invention intended to flash the BIOS of a computer, the

     microprocessor must inherently be configured to controllably write to the non-volatile

memory, as the BIOS is stored on said non-volatile memory, and to flash the BIOS

involves controllably writing a new BIOS to the non-volatile memory.)

- at least one fixed storage device operatively coupled to the at least one microprocessor

    ("at least a processor unit that may be coupled to a storage unit" in col. 2, lines 36-37)

- the storage device containing a boot image that is configured with appropriate instruction

    code to transition the microprocessor to an operational mode ("the receiving computer is

    placed in a predetermined operating state" in col. 3 lines 31-33)

- wherein the fixed storage device receives and stores a modified boot memory containing

    execution code and data necessary for the at least one microprocessor to write a firmware

    upgrade to the programmable non-volatile memory ("the receiving computer receives the

    flash information and stores the flash information such as onto a fixed disk..." in col. 3,

    lines 20-21)

substantially as claimed.

Regarding claim 9:

Angelo et al teach:

- a computer network, comprising a plurality of computer systems communicatively

    coupled to a network infrastructure (See Fig. 1 and col. 2 lines 30-33 and lines 53-55)

- containing a firmware version designated for replacement ("this information is used to

    overwrite at least a portion of the BIOS..." in col. 3 lines 5-6)

- configured with a fixed storage device containing a boot image ("stores the flash

  information such as onto a fixed disk" in col. 3 line 21)

- having appropriate instruction code suited to transition the computer system to an

  operational mode ("the receiving computer is placed in a predetermined operating

  state..." in col. 3 lines 32-33)

- a user input device communicatively coupled to at least one computer system

  communicatively coupled to the network infrastructure, at least one computer system

  configured with write access for the respective fixed storage device associated with each

  of the plurality of computer systems (Note Fig. 1 and col. 2 lines 53-55 make reference to

  a "code provider" node which transmits information to other nodes in the network)

- wherein an input from the user input device initiates a transfer of a modified boot

  memory map and a firmware upgrade patch to the plurality of computer systems. ("the

  data or code information transmitted from the code provider...comprises update

  information for updating...a portion of the (BIOS)" in col. 2 line 66 to col. 3 line 2.

substantially as claimed.

Regarding claim 10:

The rejection of claim 9 is incorporated, and further, Angelo et al teach a firmware upgrade

patch and a modified boot memory including instruction code designated to replace the

firmware on each of the respective plurality of computer systems ("transferring the flash

information from the source computer to the receiving computer, with the flash information

including the flash code, and flash code instructions and..." in col. 1 lines 58-61)

substantially as claimed.

Regarding claim 13:

The rejection of claim 10 is incorporated, and further, Angelo et al teaches a firmware

upgrade patch containing a reboot logic ("the BIOS flash is carried out. Subsequently...the

receiving computer is re-booted..." in col. 3 lines 37-38) substantially as claimed.

Claim Rejections - 35 USC § 103

15.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

16.   Claims 2-8, 11, 12 and 14-17 rejected under 35 U.S.C. 103(a) as being unpatentable over

U.S. Patent 5,859,911 to Angelo et al, in view of U.S. Patent 6,266,809 to Craig et al.

Regarding claim 2:

The rejection of claim 1 is incorporated, and further, Angelo et al do not teach directing a system

loader to direct a microprocessor to load a firmware upgrade patch. Craig et al disclose a

firmware update operating system which directs a microprocessor to load a firmware upgrade

patch ("The firmware update operating system is then downloaded to the network computer and

initiated to update the firmware" in col. 3 lines 43-45) It would have been obvious to someone of

ordinary skill in the art at the time the invention was made to utilize the methods of Craig et al in

the flash updating system of Angelo et al, as it would enable execution of programs in order to

perform the firmware upgrade in Angelo et al's disclosed computer system.

Regarding claim 3:

The rejection of claim 2 is incorporated, and further, Angelo et al do not teach a firmware

upgrade comprising an install application. Craig et al disclose the use of an install application for

upgrading the firmware of a system in col. 8 lines 50-51. It would have been obvious to someone

of ordinary skill in the art at the time the invention was made to include an install application in

the firmware upgrade of Angelo et al in order for the firmware upgrade to be carried out with a

lesser degree of human interaction.

Regarding claim 4:

The rejection of claim 2 is incorporated, and further, in Angelo et al's disclosed system, the

firmware upgrade inherently comprises a copy of the new firmware for updating the BIOS of the

system.

Regarding claim 5:

The rejection of claim 2 is incorporated, and further, Angelo et al disclose a firmware upgrade

comprising a flash application ("the flash information is stored...Then...the BIOS flash is

carried out." In col. 3 lines 34-37) The flash information must comprise some type of flash

application in order to carry out the flashing of the BIOS.

Regarding claim 6:

The rejection of claim 5 is incorporated, and further, Angelo et al do not disclose that the flash application comprises a bootable kernel. Craig et al disclose a bootable kernel ("the update operating system is a boot image of the firmware update..." in col. 3 lines 61-63.) It would have been obvious to someone of ordinary skill in the art at the time the invention was made to include a bootable kernel in the flash application, as this would enable a firmware update to occur when not connected to a network environment, such as updating the firmware off a floppy disk or a CD-ROM.

Regarding claim 7:

The rejection of claim 6 is incorporated, and further, Angelo et al do not disclose a bootable kernel comprising a system loader interface. Craig et al disclose a firmware update operating system which is downloaded and initiated to update the firmware in col. 3 lines 43-45. It would have been obvious to someone of ordinary skill in the art at the time the invention was made to include a system loader interface in the firmware update method of Angelo et al modified by Craig et al, as this would enable an alternate operating system to be loaded onto the system when the computer is booted.

Regarding claim 8:

The rejection of claim 6 is incorporated, and further, the limitation regarding the reboot logic would be obvious in view of Angelo et al for the reasons set forth in connection with claim 13.

Regarding claim 11:

The rejection of claim 10 is incorporated, and further, the limitation regarding the bootable

kernel would be obvious in view of Craig et al for the reasons set forth in connection with claim

6.

Regarding claim 12:

The rejection of claim 10 is incorporated, and further, the limitation regarding the system loader

interface would be obvious in view of Craig et al for the reasons set forth in connection with

claim 7.

Regarding claim 14:

Angelo et al teach:

- a computer system coupled to a network ("a computer system having a receiving

  computer and a source computer" in col. 1 lines 56-57)

- accessing data stored on a memory device that retains data when power is removed from

  the memory device, accessing means responsive to power being applied to the computer

  system ("stores the flash information…in NVRAM. Then…the flash information…is

  subjected to a validation process" in col. 3 lines 21-24. Further, to perform these

  validation operations on the flash information stored on the non-volatile memory

  NVRAM, the NVRAM must have an electrical signal present, therefore, the system is

  being responsive to applied power.

- means for selectively writing to the memory device in response to a remote input designated to initiate the replacement of the data stored on the memory device (Note Fig. 1 and col. 2 lines 53-55, which make reference to a "code provider" node which transmits information to the other nodes. Further, as stated in col. 3 lines 21-22, this information can be stored in NVRAM.

- stored on a fixed storage device within the computer system in response to the remote input ("the receiving computer receives the flash information and stores the flash information such as onto a fixed disk..." in col. 3 lines 20-21.

Angelo et al do not teach the storage of the new data and a bootable kernel onto a fixed disk. Craig et al teach the downloading of a bootable kernel ("update boot image" in col. 6 line 27) which contains the new firmware data ("The update boot image may contain firmware update images" in col. 6 lines 27-28). It would have been obvious to someone of ordinary skill in the art at the time the invention was made to store the new data and a bootable kernel on a fixed disk, as this would enable the firmware update to be run when not connected to a network.

Regarding claim 15:

Note rejection regarding claim 14.

Regarding claim 16:

The rejection of claim 14 is incorporated, however, Angelo et al do not teach the modification of an initial system loader address in response to a remote input. Craig et al disclose the downloading of a firmware update operating system to be loaded at computer startup, replacing

the standard operating system, as stated in col. 9 lines 30-32. Because a firmware update

operating system is downloaded to boot from rather than the standard operating system for the

purpose of updating the firmware, the address of the system loader must inherently be modified

to point to the firmware update operating system, so that when the computer is rebooted, it does

not boot into the standard operating system. It would have been obvious to someone of ordinary

skill in the art at the time the invention was made to modify the system loader address in Angelo

et al's disclosed system using Craig et al's teaching, because this would enable the computer

system to utilize the updated operating system.

Regarding claim 17:

The rejection of claim 15 is incorporated, however, Angelo et al do not disclose a programmable

non-volatile memory comprising an electrically erasable programmable read only memory. Craig

et al disclose in col. 5 lines 28-31, "The memory may include...electronically erasable

programmable read only memory (EEPROM)". It would have been obvious to someone of

ordinary skill in the art at the time the invention was made to use an EEPROM in place of the

non-volatile memory NVRAM of Angelo et al, as this would enable one to store system critical

information on a ROM while still having the flexibility of changing the information as was

previously able to do in NVRAM, as well as freeing up the RAM to be used for other

applications.

17.   Claims 18-20 and 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over

U.S. Patent 6,266,809 to Craig et al in view of U.S. Patent 5,859,911 to Angelo et al and further

in view of U.S. Patent 6,324,692 to Fiske.

Regarding claim 18:

Craig et al teach:

- delivering a firmware install patch containing a modified boot image ("firmware update

  operating system is then downloaded to the network computer" in col. 3 lines 43-45)

- within a plurality of networked computer systems ("applicable to numerous network

  computers" in col. 8 lines 17-18)

- having a firmware version designated for the firmware upgrade ("detects that the network

  computer firmware is to be updated" in col. 8 lines 41-42)

- initiating an install application contained within the firmware install patch, said install

  application containing instructions suited to perform the firmware upgrade (initiating the

  firmware update operating system to update the firmware of the network computer" in

  col. 8 lines 50-51. Due to the fact that the firmware update is completed by the operating

  system, the operating system can be considered to constitute an install application.

- modifying a system loader configuration file in response to the install application to

  direct a processor to execute instructions from the modified boot image ("said step of

  replacing the firmware update operating system comprises the step of reinitializing the

  network computer so as to load the standard operating system" in col. 8 lines 56-59. Due

  to the fact that the firmware update operating system is replaced by the standard

operating system, it is obvious to conclude that a system loader configuration file must be

present on the system, for the purpose of dictating where on the system the boot image

may be found. This would have to be changed during the re-initialization step on the

computer.

- Upon subsequent boot requests ("to be loaded at the initialization of the network

   computer." In col. 8 lines 54-55)

- Initiating a microprocessor boot request in response to the install application that loads a

   plurality of instructions in accordance with the modified boot image ("the network

   computer carries out the firmware update procedure...then the network

   computer...reboots and securely loads the normal operating system..." in col. 7 lines 55-

   61. As is shown, a boot request is received and executed in response to the firmware

   updating which inherently used instructions in accordance with the firmware update

   operating system.

- writing the new firmware within each of the plurality of networked computers

   ("initiating the firmware update operating system to update the firmware of the network

   computer" in col. 8 lines 50-51.

Craig et al do not disclose delivering a firmware install patch containing a modified boot

image to a boot disk. Angelo et al teach the storing of flash information onto a fixed disk.

("stores the flash information such as onto a fixed disk" in col. 3 line 21) It would have been

obvious to someone of ordinary skill in the art at the time the invention was made to

download the modified boot image to a local fixed disk, as this would enable the update to be

run when the computer is not connected to a network.

Neither Craig et al nor Angelo et al disclose erasing the firmware in response to the install application. Fiske discloses an installation process which directly overwrites or uninstalls previous versions of the software prior to installing the new version in col. 1 lines 15-18. It would have been obvious to someone of ordinary skill in the art at the time the invention was made to erase or uninstall the firmware in the system of Craig et al modified by Angelo et al, as this would free up free up non-volatile memory space for alternate use.

Regarding claim 19:

The rejection of claim 18 is incorporated, and further, Craig et al disclose a firmware install comprising a network data transfer ("downloading the firmware update operating system" in col. 8 line 47)

Regarding claim 20:

The rejection of claim 18 is incorporated, and further, Craig et al disclose a modified boot image containing a flash application ("the update boot image may contain firmware update images" in col. 6 line 27)

Regarding claim 22:

The rejection of claim 20 is incorporated, and further, Craig et al disclose a bootable kernel ("the update operating system is a boot image of the firmware update..." in col. 3 lines 61-63)

Regarding claim 23:

The rejection of claim 20 is incorporated, and further, the limitation regarding the system loader

interface would be obvious in view of Craig et al for the reasons set forth in connection with

claim 7.

Regarding claim 24:

The rejection of claim 20 is incorporated, and further, the limitation regarding the reboot logic

would be obvious in view of Craig et al for the reasons set forth in connection with claim 13.

Regarding claim 25:

The rejection of claim 20 is incorporated, and further, because the firmware update procedure is

carried out and the firmware is updated, there must inherently be some firmware update logic to

carry out the updating of the firmware. Otherwise, this update would not occur.

Regarding claim 26:

The rejection of claim 20 is incorporated, and further, because the firmware update procedure

updates the firmware stored in non-volatile memory, there must inherently be some non-volatile

memory interface for the update procedure to communicate with. Otherwise, the procedure

would not be able to update the non-volatile memory.

18.   Claim 21 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent

6,266,809 to Craig et al in view of U.S. Patent 5,859,911 to Angelo et al, further in view of U.S.

Patent 6,324,692 to Fiske, as applied to claim 18 above, and further in view of U.S. Patent

5,901,225 to Ireton et al.

Regarding claim 21, note prior rejection of claim 18, and further, Craig et al disclose the

installing of a new operating system once the new firmware is installed ("If the procedure was

successful, then the network computer…reboots and securely loads the normal operating system"

in col. 7 lines 58-61) Further, Craig et al teach the removing of the firmware install patch from

the computer ("wherein said step of replacing the firmware update operating system comprises

the step of reinitializing the network computer so as to load the standard operating system" in

col. 8 lines 56-59. Because the firmware update operating system is replaced by the standard

operating system, it would be obvious that the patch was removed from the system. However,

neither Craig et al nor Angelo et al nor Fiske teach the method of installing software patches

which require the new firmware. Ireton et al disclose the patching of software on a system

wherein the firmware is included on the device ("The patch mechanism advantageously provides

a means for finding firmware errors, prototyping fixes to the errors and/or prototyping new

functionality of the firmware of the embedded system." In col. 2 lines 57-60) It would have been

obvious to someone of ordinary skill in the art at the time the invention was made to include and

install software patches with the firmware installer, as this would enable the updated software to

make use of the new functionality of the updated firmware, as stated in Ireton et al above.

Conclusion

19.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trent J Roche whose telephone number is (703)305-4627. The examiner can normally be reached on Monday-Friday, 8:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (703)305-9662.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

TJR
July 22, 2003

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